



STATE OF TENNESSEE  
DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
NASHVILLE, TENNESSEE 37243-0435

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January 21, 2019

**Via Electronic Mail to [wdwhite0@tva.gov](mailto:wdwhite0@tva.gov)**

Attn: W. Douglas White, NEPA Specialist  
Tennessee Valley Authority  
400 West Summit Hill Drive, WT 11B  
Knoxville, TN 37902

Dear Mr. White:

The Tennessee Department of Environment and Conservation (TDEC) appreciates the opportunity to provide comments on the Tennessee Valley Authority (TVA) *Draft Environmental Assessment* (EA) which proposes to enter into a power purchase agreement (PPA) with SR Jackson, LLC (SR Jackson), the facility-specific entity affiliated with Silicon Ranch Corporation (SRC), to purchase electric power generated by a proposed solar photovoltaic (PV) facility. The proposed solar facility would be constructed and operated by SR Jackson and would have direct current (DC) generating capacity of 2 megawatts (MW). The PPA would be executed through TVA's Distributed Solar Solutions (DSS) program, under which TVA agrees to purchase qualifying renewable energy at set prices for a 20-year period. The proposed solar facility would occupy approximately a 44 acre site, located approximately 7 miles west of downtown Jackson. The project would consist of multiple parallel rows of PV panels on single-axis tracking structures, DC to alternating current (AC) inverters, and one transformer. It would connect to the existing Jackson Energy Authority (JEA)-owned overhead 12.47-kilovolt (Kv) power line along the southern boundary of the project site. This project is being developed to help support JEA customer goals for renewable energy.

Actions considered in detail within the Draft EA include:

- **Alternative A – No Action Alternative.** The No Action Alternative provides for a baseline of conditions against which the impacts of the Proposed Action Alternative can be measured. Under this alternative, TVA would not purchase power from the solar facility and the solar facility would not be constructed and operated by SR Jackson. Under the No Action Alternative, environmental conditions in the project area would remain unchanged in the immediate future. The identified land would not be developed into a solar facility. No improvements would be made to the land. The approved 2 MW of solar capacity would not be developed, limiting community access to solar energy options and choices.
- **Alternative B – Proposed Action Alternative.** The Proposed Action Alternative would provide for the installation of a 2-MW solar facility in Madison County for which TVA would enter a 20-year PPA with SR Jackson. The proposed project would be developed on a 44.4-acre tract south of US 70/SR 1 (Airways Boulevard), east of the SR 223 intersection, and just north of the McKellar-Sipes Regional Airport. While

the design is in the process of being finalized, the conceptual plan includes a combination of monofacial and bifacial solar modules comprised of approximately 5,500 individual panels arranged over roughly 15 acres.

The Proposed Action Alternative would result in the installation of approximately 5,500 individual solar panels arranged over roughly 15 acres of the 44.4-acre area. The solar arrays would likely be supported by steel piles which would either be driven or screwed into the ground to a depth of 6 to 10 feet. On-site sedimentation basins would be shallow and, to the extent feasible, utilize the existing terrain without requiring extensive excavation. The PV panels would be connected with underground wiring placed in trenches. The trenches would be approximately 3 to 4 feet deep and 1 to 4 feet wide.

The solar arrays utilized for the proposed facility would be composed of multiple monocrystalline PV modules, or panels. PV power generation is the direct conversion of light into electricity at the atomic level.<sup>1</sup> The SR Jackson solar facility would be composed of approximately 5,500 PV panels, each capable of producing approximately 360 watts, mounted together in arrays.<sup>2</sup> The PV panels would be mounted on motor-operated axis tracker structures, commonly referred to as single-axis trackers.<sup>3</sup>

TDEC has reviewed the Draft EA and has the following comments regarding the proposed action and its alternative:

### **General Comments**

The project is within the New Madrid Seismic Zone. According to the Catastrophic Earthquake Response Planning Project (2009), Madison County is listed as a county that is anticipated to be impacted or severely impacted during a major seismic event.<sup>4</sup> This area is anticipated to experience increased soil amplification and liquefaction. TDEC recommends TVA consider soil amplification and liquefaction potential at the site to determine the risk from seismic activity.

The Draft EA does not address plans to develop the 19-acre western portion of the property. If there are any preliminary plans to expand this solar project to those acres in the future, TDEC recommends including that information in the Final EA.

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<sup>1</sup> Some materials exhibit a property known as the photoelectric effect that causes them to absorb photons of light and release electrons. When these free electrons are captured, an electric current is produced, which can be used as electricity (TVA 2014). The proposed facility would convert sunlight into DC electrical energy within monocrystalline PV panels.

<sup>2</sup> The arrays would connect to a total of 34 1,500V power inverters to convert the DC electricity generated by the solar panels into AC electricity, one 2.00-mega volt amp (MVA) transformer for the project's electrical collection system, and a riser pole connecting to the JEA distribution system.

<sup>3</sup> The axis trackers would be designed to pivot the panels along their north-south axes to follow the path of the sun from the east to the west across the sky. The tracker assemblies would be constructed in parallel north-south rows using steel piles installed using either a vibratory pile driver or helical piles with a depth of 6 to 10 feet below grade. The PV modules would be electrically connected in series (called a "string") by wire harnesses that conduct DC electricity to combiner boxes. Each combiner box would collect power from a total of 202 strings of modules and feed a power conversion station via cables placed in excavated trenches. The excavated trenches would be approximately 3 to 4 feet deep and 1 to 4 feet wide. Each trench would be backfilled with project-site native soil and then appropriately compacted. Aboveground cables would be used to connect the modules to harnesses that lead wiring to combiner boxes. The AC power from each individual inverter, typically 50 kW, will be collected at an AC recombiner to be sent to the transformer. The underground voltage collection circuits will deliver AC electricity from the single transformer to the project's riser pole connecting to the existing JEA overhead powerline.

<sup>4</sup> For more information, please visit [http://cusec.org/documents/scenarios/2009\\_Scenario\\_MAE\\_Center\\_Vol\\_I.pdf](http://cusec.org/documents/scenarios/2009_Scenario_MAE_Center_Vol_I.pdf).

In the Draft EA, TVA notes that attempts were made to communicate with nearby community organizations, businesses, and residents to coordinate construction activities such that disturbances are minimized. TVA also notes that some attempts to reach neighboring locations were unsuccessful. TDEC recommends that TVA continue to make efforts to coordinate construction activities with nearby locations.

## **Cultural and Natural Resources**

TDEC believes the Draft EA adequately addresses potential impacts to cultural and natural resources within the proposed project area.<sup>5</sup>

## **Energy Resources**

TDEC is supportive of resiliency efforts, including more decentralized power supply, in the state. In the event of an energy emergency, the site may provide an emergency source of electricity for critical infrastructure and facilities (e.g., hospitals, shelters, food banks) in the region.

TDEC recommends that consideration be given to using electric-powered lawn equipment, which can be as much as fifty percent (50%) quieter than traditional gas-operated model. Electric-powered Lawn equipment has zero air emissions onsite, reduces petroleum-fuel purchases, and eliminates used oil waste.<sup>6</sup> Similarly, if there is an opportunity to use all-electric portable earthmoving equipment, it would result in reduced noise, air emissions, petroleum-fuel purchases, and used oil waste. TDEC recommends TVA consider these additional details in the Final EA.

Finally, TDEC recommends that TVA consider addressing any potential Electro Magnetic Field (EMF) impacts that may result from the proposed action in the final EA.<sup>7</sup>

## **Air Resources**

TDEC recommends that should open burning be considered for disposal of wood wastes generated from the proposed project, alternatives to open burning, including chipping, composting or grinding of wood waste, be evaluated first. If open burning is selected for wood waste disposal TVA should consider implementing a smoke management plan, not burning on air quality alert days, and coordinating burning with other agencies (local and State air pollution control agencies, forestry agencies and local fire departments). TDEC encourages the Final EA to include discussion relating to the management of wood wastes generated by the Preferred Alternative.

## **Solid Waste**

During the course of construction and facility operations, all materials determined to be wastes should be evaluated (e.g., waste determinations) and managed (e.g., inspections, container requirements, permitted transport, and disposal) in accordance with the Solid and Hazardous Wastes Rules and Regulations of the State (TDEC

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<sup>5</sup> This is a state-level review only and cannot be substituted for a federal agency Section 106 review/response. Additionally, a court order from Chancery Court must be obtained prior to the removal of any human graves. If human remains are encountered or accidentally uncovered by earthmoving activities, all activity within the immediate area must cease. The county coroner or medical examiner, a local law enforcement agency, and the state archaeologist's office should be notified at once (Tennessee Code Annotated 11-6-107d).

<sup>6</sup> Lawn equipment could be charged on site with the energy generated.

<sup>7</sup> There is increased stakeholder awareness regarding possible EMF impact and utility scale solar projects. While consensus regarding effects in general, and more specifically, their magnitude, has yet to be reached, it may be in TVA's best interest to proactively address any concerns that Tennessee Valley customers may have.

DSWM Rule 0400 Chapters 11 and 12, respectively) in addition to other applicable TVA best management practices. TDEC recommends that the Final EA include reference to applicable state regulations.

## **Water Resources**

The Draft EA notes that a stormwater construction general permit (CGP) will be required including a Stormwater Pollution Prevention Plan (SWPPP). The project will require a hydrologic determination to be performed by a certified hydrologic professional to identify all of the aquatic resources within the limits of project disturbance and assess the potential for any alterations to wet weather conveyances, streams, wetlands, or other aquatic resource, and whether an Aquatic Resource Alteration Permit (ARAP) will be required. TDEC recommends the Final EA include these considerations.

There will be considerable vegetation management around the panels using herbicides. Care should be taken to follow manufacturer's directions and avoid herbicide application prior to predicted rainfall events or high winds to minimize any possibility of runoff or drift. TDEC recommends the Final EA include these considerations.

TDEC appreciates the opportunity to comment on this Draft EA. Please note that these comments are not indicative of approval or disapproval of the proposed action or its alternatives, nor should they be interpreted as an indication of future permitting decisions by TDEC. Please contact me should you have any questions regarding these comments.

Sincerely,



Kendra Abkowitz, PhD

Assistant Commissioner, Office of Policy and Sustainable Practices

Tennessee Department of Environment and Conservation

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